

### **ABSTRACT OF THE DISCLOSURE**

An apparatus for generating hydrogen inside of a fuel cell is provided. The fuel cell comprises an anode having at least one inlet and optionally one outlet and, a cathode having at least one inlet and optionally one outlet. An electrolyte is disposed between the anode and the cathode, and a catalyst is provided in a chamber for catalyzing a reaction of a solution comprising a solvent and an at least one chemical hydride dissolved therein to generate hydrogen inside of the fuel cell. A method for generating hydrogen inside of a fuel cell is also disclosed.